

NON-PUBLIC?: N
ACCESSION #: 9601020072
LICENSEE EVENT REPORT (LER)

FACILITY NAME: Peach Bottom Atomic Power Station Unit 3 PAGE: 1 OF 3

DOCKET NUMBER: 05000278

TITLE: Main Turbine Trip Caused Full Reactor Scram
EVENT DATE: 12/02/95 LER #: 95-007-00 REPORT DATE: 12/26/95

OTHER FACILITIES INVOLVED: DOCKET NO: 05000

OPERATING MODE: N POWER LEVEL: 100

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR
SECTION:
50.73(a)(2)(iv)

LICENSEE CONTACT FOR THIS LER:
NAME: Anthony J. Wasong, Manager -
Experience Assessment TELEPHONE: (717) 456-7014

COMPONENT FAILURE DESCRIPTION:
CAUSE: SYSTEM: COMPONENT: MANUFACTURER:
REPORTABLE NPRDS:

SUPPLEMENTAL REPORT EXPECTED: NO

ABSTRACT:

On 12/02/95, an unexpected Main Turbine trip occurred and caused closure of the Turbine Stop Valves which initiated a full reactor scram. Immediately following the scram, Primary Containment Isolation System (PCIS) Group II/III isolations occurred as expected. The Reactor Protection System scram and PCIS logics were reset. Troubleshooting revealed that the Mechanical Trip Solenoid Valve's coil was momentarily energized due to a combination of two grounds in the DC electrical power system. The first was a intermittent ground on a terminal strip associated with the Mechanical Trip Solenoid. The second was a momentary ground induced during the performance of a Routine Test (RT). This ground occurred during the installation of grounded test equipment onto a relay contact. The RT required the technician to install test equipment in a location which was difficult to access. The simultaneous occurrence of these two grounds provided enough DC current to pickup the Mechanical Trip Solenoid causing a Main Turbine Trip. The terminal strip which

caused the initial ground was replaced and generic implications will be considered. The RTs used to perform this type testing on the Diesel Generators will be evaluated to identify if alternative testing methods are possible. RT revisions will be implemented as appropriate. The pertinent information from this event will be provided to the appropriate Station personnel. No previous similar events have been identified.

END OF ABSTRACT

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Requirements of the Report

This report is being submitted pursuant to 10 CFR 50.73 (a)(2)(iv) due to Engineered Safety Feature (ESF) actuations.

Unit Conditions at Time of Event

Unit 3 was in the "RUN" mode at 100% of rated thermal reactor power. There were no systems, structures, or components that were inoperable that contributed to the event.

Description of the Event

On 12/02/95 at 0145 hours, an unexpected Main Turbine trip occurred and caused closure of the Turbine Stop Valves. Closure of these valves is an input to the Reactor Protection System (RPS) (EIIIS:JC) logic which initiated a full reactor scram. Immediately following the scram, Primary Containment Isolation System (PCIS) (EIIIS:JM) Group II/III isolations occurred as expected when Reactor water level momentarily dropped below 0" as a result of void collapse upon insertion of the control rods. The RPS scram logic was reset at 0153 hours and the PCIS logics were reset at 0205 hours. Affected systems were restored to the appropriate configuration. The NRC was notified of the event at 0346 hours.

Cause of the Event

The cause of the scram was that the Turbine Stop Valves unexpectedly closed causing a Main Turbine trip. Troubleshooting revealed that the Mechanical Trip Solenoid Valve's coil was momentarily energized due to a combination of two grounds in the DC electrical power system.

The first was an intermittent ground on a terminal strip associated with the Mechanical Trip Solenoid. This ground occurred because the terminal strip was corroded and cracked causing a short to the terminal strip mounting screw. The second was a momentary ground induced during the

performance of a Routine Test (RT)-0-052-253-2 "E3 DIESEL GENERATOR INSPECTION POST MAINTENANCE FUNCTIONAL TEST" on the E-3 Diesel Generator's Low Speed Relay. This ground occurred during the installation of grounded test equipment onto a relay contact by an Instrument & Control (I&C) Technician (Utility: Non-Licensed). The RT required the technician to install test equipment in a location which was difficult to access. The simultaneous occurrence of these two grounds provided enough DC current to pickup the Mechanical Trip Solenoid causing a Main Turbine Trip. The station was unable to identify the location of the first ground prior to the event due to the intermittent nature of the ground.

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Analysis of Event

No actual safety consequences occurred as a result of this event.

All isolations and initiations functioned per design. Had this event occurred at another power level, isolations and initiations would have also functioned per design.

Corrective Actions

After the scram occurred, the appropriate PCIS and RIPS scram logics were reset and the affected systems were reset to the appropriate configuration.

The Mechanical Trip Solenoid Valve terminal strip which caused the initial ground was replaced.

An evaluation will be performed to address the generic implications of the failed terminal strip. Corrective actions will be implemented as appropriate pending the results of the evaluation.

The RTs used to perform this type testing on the Diesel Generators will be evaluated to identify if alternative testing methods are possible. RT revisions will be implemented as appropriate pending the results of the evaluation.

The event has been discussed with the involved individuals. The pertinent information from this event will be provided to the appropriate Station personnel to emphasize the potential consequences of test equipment installation, to stress the importance of evaluating alternative methods of testing when access is difficult, and to heighten the awareness of the station to consider the ramifications of performing

plant testing and other evolutions when an intermittent or solid battery ground exists.

Previous Similar Events

No previous similar events have been identified which involved unexpected equipment actuations due to the combination of two or more grounds.

ATTACHMENT TO 9601020072 PAGE 1 OF 1

Garrett D. Edwards
Plant Manager
Peach Bottom Atomic Power Station

PECO ENERGY PECO Energy Company
1848 Lay Road
Delta, PA 17314
717 456 4244

Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Docket No. 50-278

SUBJECT: Licensee Event Report, Peach Bottom Atomic Power Station-Unit 3

This LER concerns a unplanned scram on a Main Turbine trip.

Reference: Docket No. 50-278
Report Number: 3-95-007
Revision Number: 00
Event Date: 12/02/95
Report Date: 12/26/95
Facility: Peach Bottom Atomic Power Station
1848 Lay Road, Delta, PA 17314

This LER is being submitted pursuant to the requirements of 10 CFR 50.73 (a)(2)(iv).

Sincerely,

GDE/GAJ:gaj

enclosure

cc: R. A. Burricelli, Public Service Electric & Gas
R. R. Janati, Commonwealth of Pennsylvania
INPO Records Center
T. T. Martin, US NRC, Administrator, Region I
R. I. McLean, State of Maryland
W. L. Schmidt, US NRC, Senior Resident Inspector
A. F. Kirby III, DelMarVa Power
H. C. Schwemm, VP - Atlantic Electric

CCN 95-140109

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